Using Data for Continuous Quality Improvement

Continuous quality improvement (CQI) is a systematic approach to enhancing program performance through regular data collection and data-informed decision-making. It focuses on refining processes, addressing challenges, and improving outcomes over time. By fostering a culture of CQI, organizations ensure that their programs stay responsive, effective, and aligned with their goals.

This resource provides guidance on how organizations can incorporate CQI into daily operations, promote accountability, and achieve long-term success for both participants and programs.

Key Topics

- The importance of CQI and data-driven decision-making
- Strategies for identifying and selecting the right data measures for CQI
- Best practices for collecting and analyzing data to identify trends and inform improvements
- Tips for integrating data into routine operations and decision-making processes
- Resources and templates to help implement CQI

What is CQI?

Quality Improvement (QI)

A systematic, data-driven approach focused on improving processes, services, and outcomes. QI involves identifying areas for improvement, implementing changes, and evaluating the impact of those changes to achieve measurable results (Centers for Medicare & Medicaid Services, 2024).

Continuous Quality Improvement (CQI)

An ongoing process that uses data and feedback to identify opportunities for enhancement, make informed adjustments, and ensure sustained program effectiveness. CQI builds upon QI by embedding improvement efforts into the routine operations of an organization, fostering a culture of accountability, learning, and innovation (Minnesota Department of Health, 2025).

This resource is designed for COSSUP grantees and similar organizations involved in substance use disorder prevention, treatment, and recovery programming. It aims to support them in adopting data-driven approaches to achieve meaningful improvements in their programs. Whether a program is just getting started or already has quality improvement efforts underway, this resource can serve as a guide to help strengthen and advance CQI practices at any stage.

The Role of Data in Continuous Quality Improvement

Why Should Your Organization Use Data in CQI?

Data plays an essential role in CQI by providing a clear picture of how programs are performing. It helps organizations pinpoint what is working well and where improvements are needed. For instance, analyzing participant outcomes can identify where and how much the intervention is influencing participants, while performance metrics might highlight areas where more staff or additional training and support are needed. Integrating data into decision-making ensures that changes are informed and effective, driving better results.

How Can Organizations Effectively Implement CQI?

Implementing CQI requires a structured yet adaptable approach to ensure programs remain effective, responsive, and impactful. By leveraging data at every stage, organizations can identify opportunities for growth, monitor progress, and enhance or sustain improvements over time.

CQI: Key Benefits

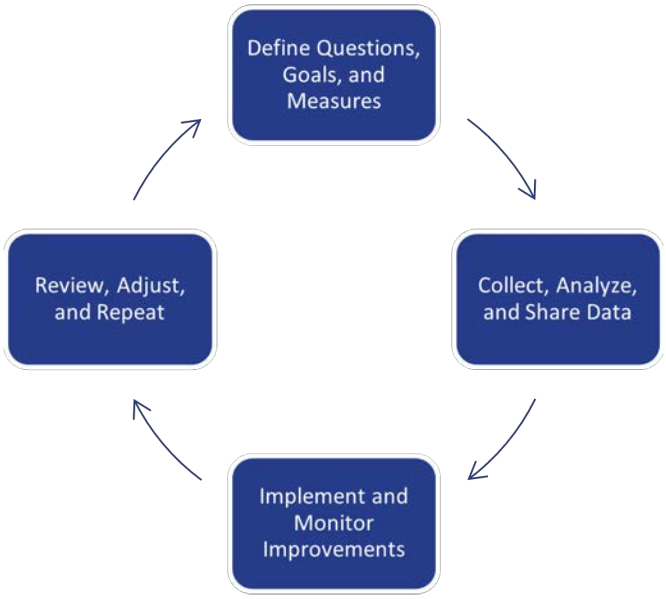
- **Tracking Program Implementation:** Ensuring fidelity to program design (i.e., the program is being implemented as intended) and identifying deviations that might impact outcomes.
- **Uncovering Areas for Improvement:** Highlighting places where the program might not be implemented as intended or gaps that need to be addressed.
- **Demonstrating Results:** Providing clear evidence of program impact to funders, partners, and the community.
- **Strengthening Collaboration:** Creating a shared understanding among partners through transparent, data-informed discussions.
- **Building Support for Future Efforts:** Using data to advocate for continued funding or expansion of successful initiatives.

Who Should Oversee the CQI Process?

To ensure the success of CQI, it is critical to designate the right people to oversee and drive the process. This could include:

- **Designated CQI Staff Member:** Assigning a dedicated staff member responsible for the implementation and coordination of CQI activities ensures focused leadership and accountability for continuous improvement efforts.
- **Organizational Leadership:** Senior leadership or program directors play a crucial role in supporting CQI by ensuring it aligns with organizational goals, allocating necessary resources, and reinforcing its importance across the organization.
- **Research & Evaluation (R&E) Team:** Involving staff from the R&E team provides data analysis and reporting expertise, promoting improvements driven by evidence-based insights.

Below are the core steps organizations can follow to embed CQI practices into their operations:



- **Define Goals and Identify Measures**
  a. Use your logic model, theory of change, or program framework to identify key questions.
  b. Choose both qualitative and quantitative measures like client satisfaction or service metrics to answer key questions.
  c. Create a data collection plan that minimizes staff burden while capturing different perspectives and considers what data you already collect.
- **Collect, Analyze, and Share Data**
  a. Assign a staff member to consistently collect data based on a set schedule.
  b. Regularly review the data to identify trends, challenges, and successes.
  c. Analyze the data to help pinpoint areas that need improvement and guide data-informed decisions.
  d. Share the findings with stakeholders, including staff, leadership, participants, and community members, to gather different perspectives.
  e. Use feedback to collaboratively inform program changes and celebrate successes.
- **Implement and Monitor Improvements**
  a. Assign clear roles and responsibilities to promote accountability and integrate data discussions into routine practices, such as team meetings.
  b. Establish a transparent monitoring process to track the impact of changes, ensuring they align with your program's overarching goals.
- **Review, Adjust, and Repeat**
  a. Regularly revisit your goals, data, and improvement strategies. Structured feedback loops—such as quarterly reviews—allow teams to evaluate the effectiveness of adjustments and remain responsive to emerging needs.
  b. Each cycle builds on the previous one, fostering adaptability and sustained progress.

Defining Data Measures for Improvement

Defining data measures for CQI involves several structured steps that support alignment with program goals and actionable outcomes.

The process includes:

Step 1: Identify Key Questions for CQI

Defining data measures begins with identifying key questions that will guide your data collection and analysis. These questions should directly address your program's goals, desired outcomes, and areas for improvement. For programs with an existing logic model, these key questions should align with inputs, activities, outputs, and outcomes. For programs that do not yet have a logic model, these questions can serve as the basis for creating a logic model, theory of change, and/or project framework.

To support your efforts in developing a logic model, COSSUP provides a Logic Model Tip Sheet and Template (PDF). This resource offers a step-by-step guide to building a logic model that clarifies program objectives and improves evaluation efforts.

Table 1. Example Key Questions for CQI

Question Type	Key Questions
Tracking Program Implementation	• To what extent are outreach efforts reaching the intended audience? • Are participants attending all required sessions? • Are program staff implementing all components or activities that are part of the program? • To what extent are participants engaged in the program? Does the program engage all types of participants equally? • What demographic characteristics do the individuals reached by the program have?
Demonstrating Results	• To what extent is the program effectively improving the target outcomes for participants? • How many participants have achieved the program's objectives? • What impact has the program had on key participant behaviors or outcomes? • How does participation in the program affect other life areas like employment, housing, or social connections?

Question Type	Key Questions
Uncovering Areas for Improvement	• Are there barriers that prevent participants from fully engaging in or completing the program? • Which parts of the program or activities are program staff struggling to implement? • What challenges has the agency faced in program delivery? • Are there gaps in the services offered? • Are there areas of the program that need more resources or support?
Strengthening Collaboration	• Are there any communication challenges between program partners? • How effective is the collaboration in addressing the target outcomes? • What are the challenges in coordinating resources across partners? • How are different partners contributing to program outcomes?

Step 2: Select Appropriate Data Measures

Selecting and defining data measures can promote data collection efforts directly aligned with program goals and priorities. Well-chosen measures provide action-oriented insights that help organizations answer key questions and drive meaningful improvements.

To effectively align data measures with program goals:

- Review the program's intended outcomes and the activities designed to achieve them.
- Identify measures that assess progress toward these outcomes.
- Ensure that data measures are meaningful and useful to partners.

Both qualitative and quantitative measures help to provide a more comprehensive understanding of program implementation, outcomes, and return on investment **(Table 2).** Frequently, quantitative data, which is usually collected from a much larger group of people, helps to explain the "what" and "how" often. On the other hand, qualitative data is usually collected from a smaller group of people during more in-depth interviews or focus groups and is used to explain the "how" and the "why." Much of this data is likely already being collected within an organization's program management system(s). By leveraging this existing data, organizations can reduce the need for additional data collection measures, allowing them to focus more on analysis and interpretation.

Table 2. Types of Data Measures for CQI

Measure Type	Definition	Example Measures	Source of Data
Quantitative Data	Numerical data that can be counted or measured, provides measurable insights into program performance.	• Percentage of participants completing treatment programs • Average wait time for services • Number and characteristics of participants accessing services • Satisfaction ratings from client surveys	• Service records • Surveys • Administrative data • Client data
Qualitative Data	Textual, descriptive data captures personal experiences and nuanced insights.	• Client testimonials about treatment effectiveness • Feedback on challenges completing the program • Suggestions for program improvements from staff and participants	• Focus groups • Interviews • Open-ended survey responses • Document analysis

When selecting data measures, it can be helpful to consider how they contribute to understanding program implementation, impact, and resource use. Process, outcome, or cost-benefit measures work together to provide a more complete picture of a program's effectiveness and sustainability. Incorporating these types of measures into evaluation efforts can support decision-making, improve services, and demonstrate value **(Table 3).** COSSUP provides more information on these types of measures in the *Getting the Most Out of Your Evaluation Report: Strategies for Success (PDF)*.

Table 3. Process, Outcome, and Cost Benefit Measures for CQI

Measure Type	Definition	Example Measures	Source of Data
Process Data	Tracks the implementation of program activities and fidelity to the program plan.	• Number of client sessions conducted per week • Participant feedback on outreach event relevance • Frequency and quality of staff training sessions	• Program activity logs • Attendance sheets • Surveys
Outcome Data	Measures the results and impact of the program on participants and the community.	• Reduction in substance use among program participants • Percentage of participants maintaining employment post-treatment • Improved access to care across demographic groups • Client satisfaction with treatment outcomes	• Pre- and post-assessments • Employment records • Demographic data

Measure Type	Definition	Example Measures	Source of Data
Cost Benefit Data	Assesses the financial efficiency of the program by comparing costs to benefits or outcomes achieved.	• Cost per client achieving sobriety • Return on investment (ROI) of treatment programs • Financial savings due to reduced emergency department visits • Reduction in criminal justice costs associated with program participants	• Budget records • Program expenditure reports • Healthcare and criminal justice system cost data

To support your efforts in selecting appropriate outcome measures, COSSUP provides a Selecting Outcome Measures to Evaluate Substance Misuse Prevention, Education, Treatment, and Recovery Support Programs Tip Sheet (PDF). This resource provides a set of considerations to contemplate when selecting outcome measures and several examples of outcome measures for different program types (e.g., law enforcement and other first responder deflection programs).

Step 3: Create a Data Collection Plan

After identifying the key questions to guide data collection and selecting appropriate measures, the next step is to develop a data collection plan. This plan will serve as a guide for gathering, managing, and analyzing data to inform program decisions. A comprehensive data collection plan promotes alignment of data gathered with program goals to support ongoing program improvement. This plan answers the "what," "who," "how," and "when" of data collection for CQI.

At a minimum, a data collection plan should include the following:

1. **What Data Will You Need to Collect to Answer Your Key Questions?** The types of data to be collected were discussed in Step 2. The data should be directly tied to your program's goals and intended outcomes and are likely to include evaluation measures if you are conducting a process, outcome, and/or cost-benefit evaluation.
2. **Who Will Collect the Data?** Assign roles and responsibilities for data collection to encourage accountability. This may involve program staff, external evaluators, partners, and data analysts. Clear ownership helps promote data quality and consistency.
3. **How Will the Data Be Collected?** The methods and tools used for data collection should be determined, including case or program management systems, surveys, interviews, focus groups, and observations. Establishing standardized protocols supports reliable and consistent data collection across all participants and activities.
4. **When Will the Data Be Collected?** Define the timing and frequency of data collection. Collecting data at key stages, including baseline data at the start of the program, provides ongoing data during implementation and follow-up data to assess outcomes and long-term impact.

Resource for Data Collection Plan

To develop a data collection plan, refer to the Evaluation Action Plan Matrix Template (PDF). This tool provides a structured format to help ensure you gather the right data, from the right sources, and at the right time.

Data Collection, Analysis, and Data-Driven Decision Making

Effective data collection and analysis turn raw data into insights that drive CQI. This step emphasizes the systematic gathering of data, its thorough analysis, and the establishment of a process to review and act on findings.

Systematic Data Collection

Systematic data collection promotes consistency and reliability of data in a way that aligns with your program's goals and objectives. Building a structured approach to data collection helps provide data that is comprehensive, accurate, and comparable over time.

- **Establish Roles and Responsibilities:** As with the data collection plan, designating individuals responsible for various roles within the systematic data collection process promotes accountability, improves data quality, and supports effective execution throughout the CQI cycle.
- **Standardize Collection Methods:** Use the same instruments and protocols (e.g., surveys, observation guides, interview templates) to the extent that it makes sense to do so to support uniformity in data collection over time. This minimizes bias and increases your ability to make comparisons of the data over time.
- **Collect Data Consistently:** Gather data at planned intervals to reflect the program's timeline and stages. Regular data collection, whether ongoing or at specific time points, helps track progress and detect issues early.

Analyze and Act on Data

Once data has been collected systematically, its analysis reveals trends, gaps, and areas for improvement. Moving from findings to pxrogram adjustments requires thoughtful prioritization, and collaboration among those involved in the program to ensure decisions are meaningful and effective.

Identify Key Insights

Understanding the data begins with combining quantitative and qualitative analysis to uncover patterns and relationships. Statistical methods can identify trends, such as shifts over time, while qualitative methods, like thematic coding, add context by exploring participant experiences, barriers, and successes. Together, these approaches provide a comprehensive picture of program performance, capturing both measurable outcomes and the underlying factors that influence them.

Once the data is analyzed, focus on identifying patterns and trends that reveal areas for further exploration. Consider questions such as:

- Are certain groups experiencing outcomes that differ significantly from others (e.g., geographic regions, age groups)?
- Have satisfaction or participation rates improved or declined over time, and what might these changes indicate?
- Are there unexpected variations between program sites or delivery methods that could highlight best practices or areas needing additional support?

By highlighting these differences, programs can pinpoint where adjustments are needed to address gaps, reduce inconsistencies, or amplify successful strategies.

Relate Results to Benchmarks and Goals

Benchmarks set during program planning serve as reference points for evaluating results. Begin by comparing findings against these benchmarks to determine whether the program is meeting expectations, exceeding them, or falling short. For example, if the satisfaction benchmark is 70%, results above or below this target can help highlight areas that are excelling or need improvement. Similarly, if the goal is a 15% reduction in substance use, assess whether outcomes are aligned and investigate any variations across participant groups or locations to ensure consistent progress.

Benchmarks, however, are more than just numbers. They reflect the program's broader goals and desired impact. Use them to highlight progress toward objectives and to identify gaps, such as lower engagement among certain groups of participants. These findings provide context for determining next steps, whether to address barriers or replicate successful strategies.

Make Data-Driven Decisions

Once insights and benchmarks have been reviewed, the next step is to interpret the key findings and prioritize actions that can drive meaningful improvement. Focus on findings that highlight opportunities for growth or areas requiring immediate attention. These might include declines in satisfaction or participation rates, or feedback pointing to gaps in service delivery. Identifying these key findings helps concentrate efforts where they are likely to have the greatest impact.

Using these insights, develop targeted recommendations that address specific issues or capitalize on opportunities. For example:

- Enhance outreach strategies to better engage participants.
- Revise program components that participants consistently flag as less effective.
- Allocate additional resources to tackle identified barriers or close service gaps.

When acting on these recommendations, start by piloting changes on a small scale. This approach minimizes disruption while allowing you to assess the effectiveness of adjustments. For instance, you might adjust delivery methods or develop tailored resources. Collect follow-up data to monitor the impact of these changes and determine whether they are achieving the desired outcomes. Based on the results, refine your approach before scaling successful strategies across the program.

Implement a Review Process

While collecting and analyzing data is important, regularly reviewing the data and adjusting the program based on the findings is equally critical. This process allows organizations to be responsive and adapt to emerging challenges and opportunities.

- **Regular Review:** Implement periodic reviews to actively engage with the data, not just collect it. Best practices suggest reviewing data at regular intervals that align with your program's schedule or key milestones. For example, reviews can occur after major activities or during key phases of the program.
- **Make Recommendations for Improvement:** Use the review to identify areas for improvement, such as refining program strategies, adjusting resource allocation, or rethinking certain activities. The review process should lead to actionable recommendations that get incorporated into program planning and implementation.
- **Feedback and Adaptation:** Share the data insights and recommendations with program staff, leadership, and key partners. This transparency encourages collaboration and helps everyone involved in the program understand the findings and implications for next steps. Adaptations to the program based on data are more effective when all parties are involved in the discussion.

Examples of COSSUP Grantee Sites Utilizing Data for CQI

Navajo County, Arizona

Navajo County's County Overdose Prevention and Engagement (COPE) Program, funded in FY 2022, connects individuals at risk of overdose to evidence-based treatment immediately after arrest. Using a CQI approach, the program continuously refines its model based on data and feedback.

In the first year, the county conducted a needs assessment and established a data collection protocol to guide implementation. In year two, the program launched, screening arrests, and linking high-risk individuals to treatment and recovery services.

Now in its third year, the program uses supervision and outcome data to make real-time adjustments, improving participant engagement and program effectiveness.

Santa Fe, New Mexico

The Santa Fe Opioid Outreach Project (SFOO) is led by the Santa Fe Fire Department (SFFD) to reduce opioid-related deaths through outreach, naloxone distribution, and harm-reduction training. Using a CQI approach, the program integrates data from patient care and first responder systems to improve outreach and case management for overdose survivors.

In its first year, SFOO partnered with the New Mexico Department of Health to improve data access and increase outreach success. The program has since expanded to include the Santa Fe County Fire Department (SFCFD) and the Law Enforcement Assisted Diversion (LEAD) program, using real-time data to continuously refine its model.

Key Takeaways

Effective use of data supports meaningful CQI efforts. By embedding data collection and analysis into routine operations, organizations can continuously refine and enhance their programs.

Data Drives Continuous Quality Improvement

By systematically collecting and analyzing data, organizations can identify areas where improvements are needed and track progress over time.

Systematic Data Enhances Program Effectiveness

By addressing the 'what,' 'who,' 'how, and 'when' of data collection, organizations can ensure they are minimizing gaps in data and prevent overlooking important aspects of the process.

Align Data with Program Goals

By using the appropriate measures—quantitative, qualitative, or process-focused—organizations can evaluate their progress in real-time and keep their efforts on track.

Data Analysis Drives Action

Collecting data is just the first step; effective analysis identifies trends, uncovers root causes of issues, and informs decision-making.

Collaborate and Maintain Transparency

Involve key participants in interpreting data to encourage shared ownership of program outcomes and support open, collaborative decision-making.

Whether your program is just beginning to think about CQI or already has practices in place, this tipsheet offers tools and guidance to support your next steps. While this tipsheet presents a comprehensive approach, you can start small. Every step toward building a CQI process contributes to stronger programs and deeper learning over time.

Additional Resources

1. Program Performance Measures Guide (Urban Institute) (PDF): This guide provides a set of examples for performance measures, helping organizations identify key data to assess program success and improvement.
2. Evaluation Planning Guide (CDC) (PDF): This guide helps organizations plan and implement evaluations for public health programs, focusing on data collection, analysis, and use for decision-making.
3. CQI Plan Template (MS Word): This planning tool assists CQI teams in guiding and tracking efforts by systematically collecting and analyzing data. It emphasizes aligning data collection with program goals, conducting effective data analysis, and fostering stakeholder engagement.
4. W.K. Kellogg Foundation Logic Model Development Guide (PDF): Offers exercises, tools, and templates to help organizations create effective logic models for their programs.
5. United Way Outcome Logic Model and Measurement Plan (PDF): A tutorial and basic templates for designing logic models and measuring program outcomes.
6. Building a Learning Culture for CQI Webinar: Explains how to foster a learning culture within programs by introducing processes that support CQI.

COSSUP Training and Technical Assistance (TTA) Services

If you have questions or need TTA support related to any of the topics below, please submit a request to the COSSUP Data and Evaluation TTA Center.

- Developing logic models for your program(s)
- Developing or enhancing data collection and tracking systems
- Finding and selecting an evaluator
- Completing an evaluation planning matrix
- Developing data sharing agreements
- Reviewing data collection instruments and informed consent procedures
- Connecting you with peers and subject matter experts

COSSUP has seven TTA providers available to support grantees in meeting specific program needs and goals across a range of strategies including overdose prevention, cross-site coordination, strategic planning, prescription drug monitoring programs, increasing access to treatment, integrating peer recovery support specialists, and others. The COSSUP Data & Evaluation TTA Center provides TTA to help organizations:

- Assess and adapt activities to ensure they are as effective as they can be,
- Demonstrate a program's success and the way to communicate impact to others,
- Identify programmatic or policy changes that should be made based on information gathered,
- Collect information that can be used when applying for future funding.

This project was supported by Grant No. 15PBJA-23-GK-02256-COAP awarded by the Bureau of Justice Assistance. The Bureau of Justice Assistance is a component of the Office of Justice Programs, which also includes the Bureau of Justice Statistics, the National Institute of Justice, the Office of Juvenile Justice and Delinquency Prevention, the Office for Victims of Crime, and Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

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